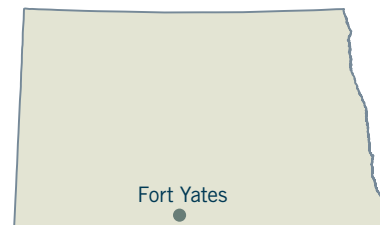


STANDING ROCK GAMING AUTHORITY

STANDING ROCK INDIAN RESERVATION FORT YATES, NORTH DAKOTA



March 2009

ACCOMPLISHMENTS

- Removed 3 USTs and 1 drum
- Installed 12 MWs
- Groundwater monitoring
- Conducted vapor exposure investigation
- Conducted ISCO pilot study
- Conducted 2 ISCO events
- Excavated and removed 260 yd³ of PCS
- Installed 2 replacement MWs



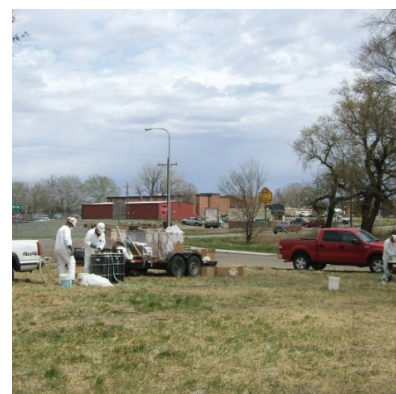
EPA Region 8 has performed this work in partnership with the Standing Rock Sioux Tribe and with contract support from Avanti Corporation.

PLANNED ACTIVITIES/ FUTURE STRATEGIES

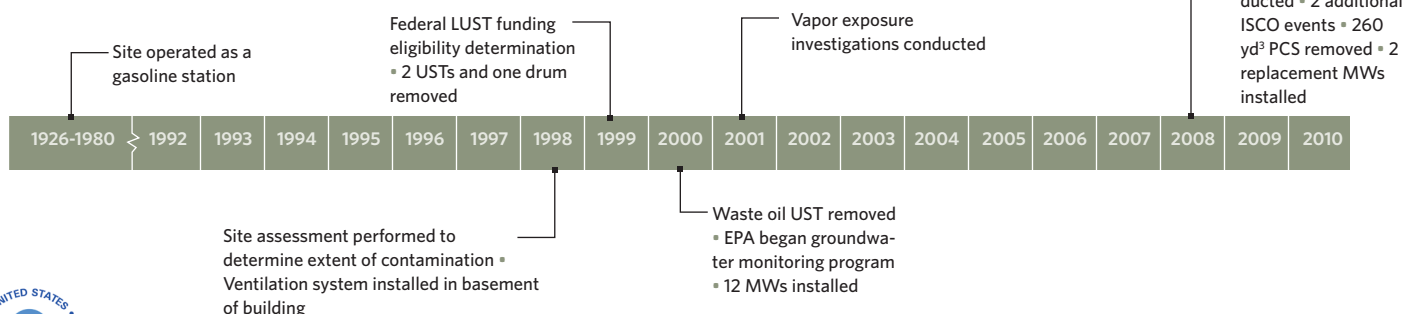
- Groundwater monitoring
- Evaluate site closure

SITE HISTORY

The site was operated as a gasoline station from 1926 until 1980. The site is currently leased to the Standing Rock Gaming Authority. In June 1998, an initial assessment of the site was performed under the direction of the North Dakota Department of Health, Underground Storage Tank (UST) Program. The purpose of the investigation was to determine (1) extent of petroleum contamination and (2) source of petroleum vapor odors in the building. Petroleum contamination was discovered in the soil north of the Gaming Authority Office, near the UST located under the northeast corner of the building. A ventilation system was installed in the basement of the building after this initial assessment. The site became eligible for federal leaking underground storage tank (LUST) funding in April 1999. Three USTs and one drum were removed between July 1999 and June 2000. Twelve monitoring wells (MWs) were installed and limited soil excavation was performed. Investigations for potential vapor exposure were conducted in 2001. In 2008, a pilot study program was developed utilizing in-situ chemical oxidation (ISCO) applied by direct push injection to treat contaminated groundwater at the site. Two subsequent ISCO events were designed and conducted based on the success of the pilot study. The ISCO events were successful in greatly reducing the contamination levels in the treatment areas. Two hundred sixty yd³ of petroleum contaminated soils (PCS) were excavated and removed from the site and replaced with clean fill. Two new MWs were installed at the site replacing two wells that were damaged during the excavation activities.



TIME LINE



STANDING ROCK GAMING AUTHORITY

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